



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,635	07/11/2001	Hugo Remi Michiels	MICH3001/JEK	7901

23364 7590 04/11/2005

BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

NI, SUHAN

ART UNIT	PAPER NUMBER
----------	--------------

2643

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,635

Applicant(s)

MICHIELS, HUGO REMI

Examiner

Suhan Ni

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7 and 9-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4,6,7 and 9-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the amendment filed 10/20/2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-4, 6-7 and 9-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima et al. (U. S. Pat. – 6,266,426) in view of Seth et al. (U. S. Pat. – 5,663,894).

Regarding claim 1, Azima et al. disclose a transducer, comprising: a one-piece piezoelectric disk (9) inherently having a first and second radial surface (Fig. 4); and a membrane (2) formed of an elastic material and attenuating sound vibrations, wherein the first radial surface of the piezoelectric disk is directly attached to the membrane (Fig. 4) as claimed. But Azima et al. do not clearly teach how to attach the first surface to the membrane as claimed. Providing suitable adhesive agent to bond a piezoelectric disk to a vibrating membrane of a loudspeaker is very well known in the art, and Seth et al. disclose a method for mounting a piezoelectric transducer on a vibrating surface by hard glue (col. 6, lines 12-16). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide suitable and commercially available adhesive agent, such as volatile acrylic glue for rapidly and firmly bond the piezoelectric driver to the vibrating membrane of the

loudspeaker, in order to efficiently and effectively assemble the loudspeaker and for obtaining relatively good vibrational characteristics as taught by Seth et al. (col. 6, lines 12-16).

Regarding claims 2-4, 6-7 and 9 Azima et al. further disclose the transducer, wherein the membrane is formed a soft material (col. 3, lines 10-44) as claimed.

Regarding claims 10-11 and 13, Azima et al. further disclose the transducer, wherein the membrane is provided with a groove (3).

Regarding claim 12, Azima et al. do not clearly teach a depth of the suspension groove as claimed. Since Azima et al. do not specially restrict the configuration of the suspension groove, and do clearly suggest to provide the panel speaker in many applications, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a suitable membrane with a desirable suspension groove, such as a depth of 90% of the membrane for the panel speaker, in order to provide a desirable panel speaker for certain application.

Regarding claim 14, Azima et al. further disclose the transducer, wherein the membrane has a circumferential edge (Fig. 3) connected to a frame (100) as claimed.

Regarding claims 15-16, Azima et al. further disclose the transducer, wherein the membrane has been configured as a part of a housing (Fig. 4) as claimed.

Regarding claims 17-18, Azima et al. further disclose the transducer, wherein the membrane is engaged to a suspension frame (1, 3) as claimed.

Regarding claims 20-21, Azima et al. do not clearly teach a frequency filter as claimed. Since providing a suitable frequency filter for an acoustic transducer is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a suitable frequency filter for an acoustic transducer as an

Art Unit: 2643

alternate choice, in order to provide a desirable loudspeaker having certain acoustic characteristics.

Response to Amendment

3. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

5. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

6. Any response to this final action should be mailed to:

**Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

or faxed to:

Art Unit: 2643

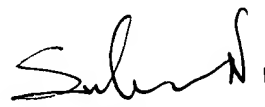
(703) 308-9051, (for formal communications; please mark "EXPEDITED PROCEDURE"), or

(703) 305-9508, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(571)-272-7505**, and the number for fax machine is **(703)-305-9508**. The examiner can normally be reached on Monday through Thursday from 9:00 am to 7:30 pm. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at **(703) 305-4708**.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (**PAIR**) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 4, 2005


SUHAN NI
PRIMARY EXAMINER